

## Object / Directory Structure Mapping

## Classes

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APPENDIX A

com.geps.util.Idap

## Class BaseDirectoryAdapter

```
java.lang.Object
  +--com.geps.util.Idap.BaseDirectoryAdapter
```

```
public abstract class BaseDirectoryAdapter
extends java.lang.Object
implements IBaseObjectClass
```

**Class Description:**

Base class for all Directory Adapters. This class is abstract and cannot be instantiated.

### Field Summary

<code>protected DirectoryEntry</code>	<code>m_dirEntry</code>
<code>protected java.util.ArrayList</code>	<code>m_modifications</code>

### Constructor Summary

`BaseDirectoryAdapter()`

### Method Summary

<code>DirectoryEntry</code>	<code>getDirEntry()</code> Desc: Use to get the DirectoryEntry from the adapter.
<code>java.util.ArrayList</code>	<code>getModifications()</code> Desc: Use to get the list of ModificationItem(s) applied to the adapter.
<code>protected void</code>	<code>initialize(DirectoryEntry de)</code> Desc: Used to initialize the adapter.

**Methods inherited from class java.lang.Object**

- , clone, equals, finalize, getClass, hashCode, notify, notifyAll, registerNatives, toString, wait, wait

### Field Detail

**m\_dirEntry**

```
protected DirectoryEntry m_dirEntry
```

**m\_modifications**

```
protected java.util.ArrayList m_modifications
```

## Constructor Detail

### BaseDirectoryAdapter

```
public BaseDirectoryAdapter()
```

## Method Detail

### initialize

```
protected void initialize(DirectoryEntry de)
    throws javax.naming.NamingException
```

**Desc:** Used to initialize the adapter. This is used by com.geps.util.ldap.DirectoryManager when its getAdapterInstance() method is called.

**Parameters:**

de - DirectoryEntry to initialize adapter with.

### getDirEntry

```
public DirectoryEntry getDirEntry()
```

**Desc:** Use to get the DirectoryEntry from the adapter.

**Specified by:**

getDirEntry in interface IBaseObjectClass

**Returns:**

Returns the DirectoryEntry associated with the adapter.

### getModifications

```
public java.util.ArrayList getModifications()
```

**Desc:** Use to get the list of ModificationItem(s) applied to the adapter. This method should not be used by clients. It is used by com.geps.util.ldap.DirectoryManager.

**Specified by:**

getModifications in interface IBaseObjectClass

**Returns:**

Returns the list of ModificationItem(s).

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com.geps.util.ldap

## Class DirectoryEntry

```
java.lang.Object
|
+--com.geps.util.ldap.DirectoryEntry
```

```
public class DirectoryEntry
extends java.lang.Object
```

**Class Description:**

Simple wrapper which represents a DirContext.

### Field Summary

private java.lang.String	m_dn
javax.naming.directory.DirContext	m_entry

### Constructor Summary

```
DirectoryEntry(javax.naming.directory.DirContext entry)
Desc: Constructor.
```

### Method Summary

javax.naming.directory.DirContext	<a href="#"><u>getDirCtx()</u></a> Desc: Use to retrieve the entry.
java.lang.String	<a href="#"><u>toString()</u></a> Desc: Override toString().

**Methods inherited from class java.lang.Object**

```
, clone, equals, finalize, getClass, hashCode, notify, notifyAll, registerNatives, wait, wait,
wait
```

### Field Detail

**m\_dn**

```
private java.lang.String m_dn
```

**m\_entry**

```
private javax.naming.directory.DirContext m_entry
```

**Constructor Detail****DirectoryEntry**

```
public DirectoryEntry(javax.naming.directory.DirContext entry)
```

Desc: Constructor.

**Method Detail****getDirCtx**

```
public javax.naming.directory.DirContext getDirCtx()
```

Desc: Use to retrieve the entry.

Returns:

Returns the entry.

**toString**

```
public java.lang.String toString()
```

Desc: Override toString().

Overrides:

toString in class java.lang.Object

---

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com.geps.util.ldap

## Class DirectoryManager

```
java.lang.Object
|
+--com.geps.util.ldap.DirectoryManager
```

```
public abstract class DirectoryManager
extends java.lang.Object
```

### Class Description:

This class represents the Directory Framework in which clients will interface with to request DirectoryEntry and object class adapters and to write entry modifications back to LDAP.

## Field Summary

private static java.lang.String	s_adapterPkg
static javax.naming.directory.InitialDirContext	s_ctx

## Constructor Summary

```
DirectoryManager()
```

## Method Summary

(package private) static void	()
private static java.lang.String	<b>extractLdapObjClassName</b> (java.lang.String name) Desc: Helper which extracts the object class name from the specified 'name'.
static BaseDirectoryAdapter	<b>getAdapterInstance</b> (DirectoryEntry entry, java.lang.String adapterName) Desc: Use to obtain the specified 'adapterName' adapter from the specified 'entry'.
static java.util.ArrayList	<b>getAdapters</b> (DirectoryEntry entry) Desc: Use to obtain a list of all adapters that the specified 'entry' is composed of.
static DirectoryEntry	<b>getEntry</b> (IBaseObjectClass adapter) Desc: Use to get DirectoryEntry from the specified 'adapter'.
static DirectoryEntry	<b>lookup</b> (java.lang.String dn) Desc: Retrieves the DirectoryEntry whos key matches the the specified 'dn'.
static java.util.ArrayList	<b>search</b> (java.lang.String ctxToSearch, java.lang.String filter) Desc: Use to execute a query against the Directory.

<code>static void</code>	<code>write(IBaseObjectClass adapter)</code>
--------------------------	--

Desc: Use to write out the contents specified by 'adapter' to LDAP.

#### Methods inherited from class java.lang.Object

`clone, equals, finalize, getClass, hashCode, notify, notifyAll, registerNatives, toString, wait, wait, wait`

### Field Detail

`s_ctx`

```
private static javax.naming.directory.InitialDirContext s_ctx
```

`s_adapterPkg`

```
private static java.lang.String s_adapterPkg
```

### Constructor Detail

`DirectoryManager`

```
public DirectoryManager()
```

### Method Detail

`lookup`

```
public static DirectoryEntry lookup(java.lang.String dn)
throws javax.naming.NamingException
```

Desc: Retrieves the DirectoryEntry whose key matches the specified 'dn'.

Returns:

DirectoryEntry associated with the specified 'dn'.

Throws:

`javax.naming.NamingException` - If a naming exception occurs or if lookup did not return object of type DirContext.

`getAdapterInstance`

```
public static BaseDirectoryAdapter getAdapterInstance(DirectoryEntry entry,
java.lang.String adapterName)
throws javax.naming.NamingException,
java.lang.ClassNotFoundException,
java.lang.InstantiationException,
java.lang.IllegalAccessException
```

Desc: Use to obtain the specified 'adapterName' adapter from the specified 'entry'. If the requested 'adapterName' is not an object class of 'entry', a null will be returned.

Parameters:

`entry` - DirectoryEntry in which to search

**Returns:**

The adapter representing the object class specified by 'adapterName' from the DirectoryEntry 'entry'. null is returned if the specified 'adapterName' is not an object class of the specified 'entry'.

**Throws:**

javax.naming.NamingException - If a naming exception occurs.

---

**getEntry**

```
public static DirectoryEntry getEntry(IBaseObjectClass adapter)
```

**Desc:** Use to get DirectoryEntry from the specified 'adapter'.

**Parameters:**

adapter - The adapter to get the DirectoryEntry from.

**Returns:**

The DirectoryEntry for the specified 'adapter'.

---

**write**

```
public static void write(IBaseObjectClass adapter)
    throws javax.naming.NamingException
```

**Desc:** Use to write out the contents specified by 'adapter' to LDAP.

**Parameters:**

adapter - Object Class to write out.

---

**getAdapters**

```
public static java.util.ArrayList getAdapters(DirectoryEntry entry)
    throws javax.naming.NamingException
```

**Desc:** Use to obtain a list of all adapters that the specified 'entry' is composed of. Each adapter name returned can be passed into DirectoryManager.getAdapterInstance(DirectoryEntry, String) as the 2nd parameter to obtain an adapter instance.

**Parameters:**

entry - DirectoryEntry in which to discover all adapters for.

**Returns:**

Non-null ArrayList of String adapters names.

---

**search**

```
public static java.util.ArrayList search(java.lang.String ctxToSearch,
    java.lang.String filter)
    throws javax.naming.NamingException
```

**Desc:** Use to execute a query against the Directory.

**Parameters:**

ctxToSearch - Context to search. "" for current context.

filter - LDAP filter.

**Returns:**

List of DirectoryEntries resulting from the query. Only DirContext objects are supported so if the query returns objects other than DirContext, they will not be in the List.

---

**extractLdapObjClassName**

```
private static java.lang.String extractLdapObjClassName(java.lang.String name)
```

Desc: Helper which extracts the object class name from the specified 'name'. 'name' looks like "com.geps.ldap.PocuserAdapter". This method removes all package names the "Adapter" suffix is stripped and the remaining string returned.

**Parameters:**

name - Adapter names which are defined constants in DirectoryConstants or the object class name itself.

**Returns:**

Returns the LDAP object class name.

---

```
static void ()
```

---

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com.geps.util.ldap

## Class Generator

```
java.lang.Object
|
---com.geps.util.ldap.Generator
```

```
public abstract class Generator
extends java.lang.Object
```

Class Description:

This class is used to generate java interfaces and adapters which represents LDAP object classes. For each LDAP object class there is one java interface and one java adapter. This class also generates the file DirectoryConstants which provides defined constants used to identify adapters. These classes \ are used in the java LDAP Directory framework. This class is abstract so it cannot be instantiated.

## Inner Class Summary

<code>private static class</code>	<code>Generator.NBP</code>
Desc: Helper class, Name Boolean Pair.	

## Field Summary

<code>private static java.lang.String</code>	<code>s_copyRightYear</code>
<code>private static java.lang.String</code>	<code>s_dateGenerated</code>
<code>private static java.lang.String</code>	<code>s_DirConstName</code>
<code>private static java.lang.String</code>	<code>s_genSrcPath</code>
<code>private static javax.naming.directory.InitialDirContext</code>	<code>s_initDirCtx</code>
<code>private static java.lang.String</code>	<code>s_multiSuffix</code>
<code>private static javax.naming.directory.DirContext</code>	<code>s_schemaRoot</code>
<code>private static java.lang.String</code>	<code>s_srcPathRoot</code>
<code>private static java.lang.String</code>	<code>s_srcPkg</code>
<code>private static java.lang.String</code>	<code>s_ts</code>

## Constructor Summary

`Generator()`

## Method Summary

<code>(package private) static void</code>	<code>()</code>
<code>private static void</code>	<code>addAttrNameToList(java.util.TreeSet store, javax.naming.NamingEnumeration vals)</code> Desc: Add attribute names to a TreeSet.
<code>private static void</code>	<code>emitAdapter(java.lang.String oc, java.util.TreeSet[] attrNames, java.io.PrintStream out)</code> Desc: Generates the adapter class for the specified object class.
<code>private static void</code>	<code>emitAdapterClassBody(java.lang.String oc, java.util.TreeSet[] attrNames, java.io.PrintStream out)</code> Desc: Writes the body of the adapter.
<code>private static void</code>	<code>emitAdapterGetters(java.util.TreeSet attrSet, java.io.PrintStream out)</code> Desc: For the specified 'attrSet' will generate getters for all attributes contained within for the adapter.
<code>private static void</code>	<code>emitAdapterImports(java.io.PrintStream out)</code> Desc: Writes the import statements for the Adapter.
<code>private static void</code>	<code>emitAdapterName(java.lang.String oc, java.io.PrintStream out)</code> Desc: Writes the adapter name and opening curly.
<code>private static void</code>	<code>emitAdapterSetters(java.util.TreeSet attrSet, java.io.PrintStream out)</code> Desc: Generate adapter setters for attributes.
<code>private static void</code>	<code>emitAdapterToString(java.util.TreeSet[] attrNames, java.io.PrintStream out)</code> Desc: Writes out the adapters <code>toString()</code> method.
<code>private static void</code>	<code>emitAdapterToStringHelper(java.io.PrintStream out)</code> Desc: Writes out the adapters <code>toString()</code> helper method.
<code>private static void</code>	<code>emitAllAdapterGetters(java.util.TreeSet[] attrNames, java.io.PrintStream out)</code> Desc: Writes out all adapter getters for both required and optional attributes.
<code>private static void</code>	<code>emitAllAdapterSetters(java.util.TreeSet[] attrNames, java.io.PrintStream out)</code> Desc: Writes out all adapter setters for both required and optional attributes.
<code>private static void</code>	<code>emitAllInterfaceGetters(java.util.TreeSet[] attrNames, java.io.PrintStream out)</code> Desc: Writes out all interface getters for both required and optional attributes.
<code>private static void</code>	<code>emitAllInterfaceSetters(java.util.TreeSet[] attrNames, java.io.PrintStream out)</code> Desc: Writes out all interface setters for both required and optional attributes.
<code>private static void</code>	<code>emitClosingClassBracket(java.io.PrintStream out)</code> Desc: Writes the class closing curly.
<code>private static void</code>	<code>emitCommentHeader(java.io.PrintStream out)</code> Desc: Writes the comment header for the file.
<code>private static void</code>	<code>emitDirConst(java.lang.String className, java.io.PrintStream out)</code> Desc: Write out adapter constant for the specified 'className'.
<code>private static void</code>	<code>emitDirConstName(java.io.PrintStream out)</code> Desc: Writes the interface name and opening curly.

<code>private static void emitGetFromModifiedCache(java.io.PrintStream out)</code>	Desc: Writes out getFromModifiedCache method.
<code>private static void emitInterface(java.lang.String oc, java.util.TreeSet[] attrNames, java.io.PrintStream out)</code>	Desc: Generates the interface class for the specified object class.
<code>private static void emitInterfaceClassBody(java.util.TreeSet[] attrNames, java.io.PrintStream out)</code>	Desc: Writes the body of the interface.
<code>private static void emitInterfaceGetters(java.util.TreeSet attrSet, java.io.PrintStream out)</code>	Desc: For the specified 'attrSet' will generate getters for all attributes contained within for the interface.
<code>private static void emitInterfaceImports(java.io.PrintStream out)</code>	Desc: Writes the import statements for the Interface.
<code>private static void emitInterfaceName(java.lang.String oc, java.io.PrintStream out)</code>	Desc: Writes the interface name and opening curly.
<code>private static void emitInterfaceSetters(java.util.TreeSet attrSet, java.io.PrintStream out)</code>	Desc: For the specified 'attrSet' will generate setters for all attributes contained within for the interface.
<code>private static void emitPackage(java.io.PrintStream out)</code>	Desc: Writes the package statement.
<code>private static void generate(java.lang.String[] objClasses)</code>	Desc: Directs the generation of interface and adapter classes.
<code>private static void getAttributes(java.lang.String oc, java.util.TreeSet mandatory, java.util.TreeSet optional)</code>	Recursively extracts all attributes for the specified 'oc' and all attributes of 'oc' superclasses.
<code>private static java.util.TreeSet[] getAttrList(java.lang.String oc)</code>	Desc: Create a list of required and optional attribute names for the specified 'oc' object class and all attributes of 'oc' super object classes and so on by looking up these values in the LDAP Schema.
<code>private static java.lang.String[] getObjClasses()</code>	Desc: This method will query LDAP to get all object class names and returns those names in an array of Strings.
<code>private static void initialize()</code>	Desc: Gets required system properties, figures out where to create the generated files.
<code>static void main(java.lang.String[] args)</code>	Desc: Program entry point.
<code>private static void shutDown()</code>	Desc: Release any remaining resources.

**Methods inherited from class `java.lang.Object`**

`clone, equals, finalize, getClass, hashCode, notify, notifyAll, registerNatives, toString, wait, wait, wait`

**Field Detail****s\_multiSuffix**

```
private static final java.lang.String s_multiSuffix
```

**s\_ts**

```
private static java.lang.String s_ts
```

**s\_DirConstName**

```
private static final java.lang.String s_DirConstName
```

**s\_srcPathRoot**

```
private static java.lang.String s_srcPathRoot
```

**s\_genSrcPath**

```
private static java.lang.String s_genSrcPath
```

**s\_srcPkg**

```
private static java.lang.String s_srcPkg
```

**s\_initDirCtx**

```
private static javax.naming.directory.InitialDirContext s_initDirCtx
```

**s\_schemaRoot**

```
private static javax.naming.directory.DirContext s_schemaRoot
```

**s\_dateGenerated**

```
private static java.lang.String s_dateGenerated
```

**s\_copyRightYear**

```
private static java.lang.String s_copyRightYear
```

**Constructor Detail****Generator**

```
public Generator()
```

## Method Detail

### main

```
public static void main(java.lang.String[] args)
```

Desc: Program entry point. If an object class name does not exist, an error message will be generated and processing continued.

Parameters:

args - Array of parameters. If the value of args[0].equals("ALL"), then interfaces/adapters will be generated for all object classes in the LDAP. Any further arguments are ignored. But if the value of args[0] is not equal to "ALL", then the arguments are expected to be LDAP object class names. Each name passed in will be processed and a resulting interface/adapter will be generated.

---

### initialize

```
private static void initialize()
    throws java.lang.Exception
```

Desc: Gets required system properties, figures out where to create the generated files.

---

### generate

```
private static void generate(java.lang.String[] objClasses)
    throws java.lang.Exception
```

Desc: Directs the generation of interface and adapter classes. Interfaces are prefixed with an "I" and adapters are suffixed with "Adapter". Also creates a file which contains constant strings used to identify object classes.

---

### emitInterface

```
private static void emitInterface(java.lang.String oc,
    java.util.TreeSet[] attrNames,
    java.io.PrintStream out)
    throws javax.naming.NamingException
```

Desc: Generates the interface class for the specified object class.

Parameters:

oc - Object Class to generate interface for.

attrNames - Array of TreeSet object containing the required and optional attribute names. Required is at index 0, optional at index 1.

out - Stream to write to.

---

### emitAdapter

```
private static void emitAdapter(java.lang.String oc,
    java.util.TreeSet[] attrNames,
    java.io.PrintStream out)
    throws javax.naming.NamingException
```

**Desc:** Generates the adapter class for the specified object class.

**Parameters:**

oc - Object Class to generate adapter for.

attrNames - Array of TreeSet object containing the required and optional attribute names. Required is at index 0, optional at index 1.

out - Stream to write to.

### emitCommentHeader

```
private static void emitCommentHeader(java.io.PrintStream out)
```

**Desc:** Writes the comment header for the file.

**Parameters:**

out - Stream to write to.

### emitPackage

```
private static void emitPackage(java.io.PrintStream out)
```

**Desc:** Writes the package statement.

**Parameters:**

out - Stream to write to.

### emitInterfaceImports

```
private static void emitInterfaceImports(java.io.PrintStream out)
```

**Desc:** Writes the import statements for the Interface.

**Parameters:**

out - Stream to write to.

### emitAdapterImports

```
private static void emitAdapterImports(java.io.PrintStream out)
```

**Desc:** Writes the import statements for the Adapter.

**Parameters:**

out - Stream to write to.

### emitInterfaceName

```
private static void emitInterfaceName(java.lang.String oc,
                                     java.io.PrintStream out)
```

**Desc:** Writes the interface name and opening curly.

**Parameters:**

oc - Object class name.

out - Stream to write to.

**emitAdapterName**

```
private static void emitAdapterName(java.lang.String oc,
                                    java.io.PrintStream out)
```

Desc: Writes the adapter name and opening curly.

Parameters:

oc - Object class name.  
out - Stream to write to.

---

**emitDirConstName**

```
private static void emitDirConstName(java.io.PrintStream out)
```

Desc: Writes the interface name and opening curly.

Parameters:

oc - Object class name.  
out - Stream to write to.

---

**emitInterfaceClassBody**

```
private static void emitInterfaceClassBody(java.util.TreeSet[] attrNames,
                                         java.io.PrintStream out)
                                         throws javax.naming.NamingException
```

Desc: Writes the body of the interface.

Parameters:

attrNames - An array of TreeSet objects containing the required and optional object class attribute names.  
TreeSet[0] = required, TreeSet[1] = optional.  
out - Stream to write to.

---

**emitAdapterClassBody**

```
private static void emitAdapterClassBody(java.lang.String oc,
                                         java.util.TreeSet[] attrNames,
                                         java.io.PrintStream out)
                                         throws javax.naming.NamingException
```

Desc: Writes the body of the adapter.

Parameters:

oc - Object class name.  
attrNames - An array of TreeSet objects containing the required and optional object class attribute names.  
TreeSet[0] = required, TreeSet[1] = optional.  
out - Stream to write to.

---

**emitAllInterfaceGetters**

```
private static void emitAllInterfaceGetters(java.util.TreeSet[] attrNames,
                                         java.io.PrintStream out)
```

Desc: Writes out all interface getters for both required and optional attributes.

Parameters:

attrNames - An array of TreeSet containing the required and optional attribute names.

out - Stream to write to.

---

### emitAllInterfaceSetters

```
private static void emitAllInterfaceSetters(java.util.TreeSet[] attrNames,  
                                         java.io.PrintStream out)
```

Desc: Writes out all interface setters for both required and optional attributes.

Parameters:

attrNames - An array of TreeSet containing the required and optional attribute names.  
out - Stream to write to.

---

### emitAllAdapterGetters

```
private static void emitAllAdapterGetters(java.util.TreeSet[] attrNames,  
                                         java.io.PrintStream out)
```

Desc: Writes out all adapter getters for both required and optional attributes.

Parameters:

attrNames - An array of TreeSet containing the required and optional attribute names.  
out - Stream to write to.

---

### emitAllAdapterSetters

```
private static void emitAllAdapterSetters(java.util.TreeSet[] attrNames,  
                                         java.io.PrintStream out)
```

Desc: Writes out all adapter setters for both required and optional attributes.

Parameters:

attrNames - An array of TreeSet containing the required and optional attribute names.  
out - Stream to write to.

---

### emitInterfaceGetters

```
private static void emitInterfaceGetters(java.util.TreeSet attrSet,  
                                         java.io.PrintStream out)
```

Desc: For the specified 'attrSet' will generate getters for all attributes contained within for the interface.

Parameters:

attrSet - Set of attribute names to generate getters for.  
out - Stream to write to.

---

### emitInterfaceSetters

```
private static void emitInterfaceSetters(java.util.TreeSet attrSet,  
                                         java.io.PrintStream out)
```

Desc: For the specified 'attrSet' will generate setters for all attributes contained within for the interface.

Parameters:

attrSet - Set of attribute names to generate setters for.  
out - Stream to write to.

---

**emitAdapterSetters**

```
private static void emitAdapterSetters(java.util.TreeSet attrSet,
                                      java.io.PrintStream out)
```

Desc: Generate adapter setters for attributes.

Parameters:

attrSet - Set of attribute names to generate setters for.  
out - Stream to write to.

---

**emitAdapterGetters**

```
private static void emitAdapterGetters(java.util.TreeSet attrSet,
                                       java.io.PrintStream out)
```

Desc: For the specified 'attrSet' will generate getters for all attributes contained within for the adapter.

Parameters:

attrSet - Set of attribute names to generate getters for.  
out - Stream to write to.

---

**emitGetFromModifiedCache**

```
private static void emitGetFromModifiedCache(java.io.PrintStream out)
```

Desc: Writes out getFromModifiedCache method. This is a getter helper method which looks into the modified cache for changes.

Parameters:

out - Stream to write to.

---

**emitAdapterToString**

```
private static void emitAdapterToString(java.util.TreeSet[] attrNames,
                                         java.io.PrintStream out)
```

Desc: Writes out the adapters toString() method.

Parameters:

attrNames - An array of TreeSet containing the required and optional attribute names.  
out - Stream to write to.

---

**emitAdapterToStringHelper**

```
private static void emitAdapterToStringHelper(java.io.PrintStream out)
```

Desc: Writes out the adapters toString() helper method.

Parameters:

out - Stream to write to.

---

**emitDirConst**

```
private static void emitDirConst(java.lang.String className,
                                java.io.PrintStream out)
```

Desc: Write out adapter constant for the specified 'className'.

Parameters:

className - Object class name to write constant for.  
out - Stream to write to.

---

### emitClosingClassBracket

```
private static void emitClosingClassBracket(java.io.PrintStream out)
```

Desc: Writes the class closing curly.

Parameters:

out - Stream to write to.

---

### shutDown

```
private static void shutDown()
    throws javax.naming.NamingException
```

Desc: Release any remaining resources.

---

### getObjClasses

```
private static java.lang.String[] getObjClasses()
    throws javax.naming.NamingException
```

Desc: This method will query LDAP to get all object class names and returns those names in an array of Strings.

Returns:

Returns an array of Strings containing all object class names.

Throws:

javax.naming.NamingException - If a naming exception occurs.

---

### getAttrList

```
private static java.util.TreeSet[] getAttrList(java.lang.String oc)
    throws javax.naming.NamingException
```

Desc: Create a list of required and optional attribute names for the specified 'oc' object class and all attributes of 'oc' super object classes and so on by looking up these values in the LDAP Schema. Along with each attribute name is a boolean flag which indicates if the attribute is single valued or not. Returns this information in an array of TreeSet objects. The first element in the array contains the required attributes and the second element contains the optional attributes. The elements in contained in the TreeSet are Generator.NBP objects (Name Boolean Pair). The name is the attribute name and the boolean indicates if it is single valued or not.

Parameters:

oc - Object class name to build attribute list for.

Returns:

Array of TreeSet containing the required and optional attributes.

---

### getAttributes

```
private static void getAttributes(java.lang.String oc,
                                java.util.TreeSet mandatory,
                                java.util.TreeSet optional)
                                throws javax.naming.NamingException
```

Recursively extracts all attributes for the specified 'oc' and all attributes of 'oc' superclasses.

**Parameters:**

oc - Object class name in which to extract attributes for.  
mandatory - TreeSet to store mandatory attributes.  
optional - TreeSet to store optional attributes.

---

### addAttrNameToList

```
private static void addAttrNameToList(java.util.TreeSet store,
                                      javax.naming.NamingEnumeration vals)
                                      throws javax.naming.NamingException
```

Desc: Add attribute names to a TreeSet. TreeSet does not allow dups. For each attribute 'vals', this method also determines if that attribute is single or multivalued. The attribute name and whether it is single valued or not is added to 'store' as Generator.NBP (Name Boolean Pair) object.

**Parameters:**

store - TreeSet to store attribute names  
vals - Enumeration of attribute names

---

static void ()

---

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com.geps.util.ldap

## Class Generator.NBP

```
java.lang.Object
|
+-com.geps.util.ldap.Generator.NBP
```

Enclosing class:  
Generator

```
private static class Generator.NBP
extends java.lang.Object
implements java.lang.Comparable
```

Desc: Helper class, Name Boolean Pair. Holds attributeName, isSingle boolean pair.

### Field Summary

java.lang.String	m_attrName
------------------	------------

boolean	m_isSingle
---------	------------

### Constructor Summary

Generator.NBP(java.lang.String attrName, boolean isSingle)
--

### Method Summary

int	compareTo(java.lang.Object obj)
-----	---------------------------------

#### Methods inherited from class java.lang.Object

, clone, equals, finalize, getClass, hashCode, notify, notifyAll, registerNatives, toString, wait, wait, wait
---

### Field Detail

#### m\_attrName

```
public java.lang.String m_attrName
```

**m\_isSingle**

```
public boolean m_isSingle
```

**Constructor Detail****Generator.NBP**

```
public Generator.NBP(java.lang.String attrName,  
                     boolean isSingle)
```

**Method Detail****compareTo**

```
public int compareTo(java.lang.Object obj)
```

**Specified by:**

compareTo in interface java.lang.Comparable

---

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com.geps.utilldap

## Interface IBaseObjectClass

**All Known Implementing Classes:**  
BaseDirectoryAdapter**public interface IBaseObjectClass****Class Description:****Base interface for all object class interfaces.**

### Method Summary

DirectoryEntry	<a href="#">getDirEntry()</a>
java.util.ArrayList	<a href="#">getModifications()</a>

### Method Detail

#### [getModifications](#)

**public java.util.ArrayList [getModifications\(\)](#)**

#### [getDirEntry](#)

**public DirectoryEntry [getDirEntry\(\)](#)**[Class Tree](#) [Deprecated](#) [Index](#) [Help](#)[PREV CLASS](#) [NEXT CLASS](#)  
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com.geps.util.ldap

## Class Util

```
java.lang.Object
 |
 ---com.geps.util.ldap.Util
```

```
public abstract class Util
extends java.lang.Object
```

Class Description:

Utility methods used by classes in the com.geps.util.ldap package. This class is abstract and cannot be instantiated.

### Field Summary

static java.lang.String	<b>ADAPTER_SUFFIX</b>
static java.lang.String	<b>INTERFACE_PREFIX</b>

### Constructor Summary

```
Util()
```

### Method Summary

static java.lang.String	<b>convertToValidMethodName</b> (java.lang.String str)
Desc: Will return a string with the same contents of 'str' but with the 1st character uppercased, the rest of the characters lower case and any '-' to '_'.	

#### Methods inherited from class java.lang.Object

```
, clone, equals, finalize, getClass, hashCode, notify, notifyAll, registerNatives, toString,
wait, wait, wait
```

### Field Detail

#### INTERFACE\_PREFIX

```
public static final java.lang.String INTERFACE_PREFIX
```